



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,218	10/21/2003	Robert F. Bretl	1098-012/MMM	2340
21034	7590	12/20/2006		
IPSOLON LLP 111 SW COLUMBIA SUITE 710 PORTLAND, OR 97201			EXAMINER RABOVIANSKI, ANTON I	
			ART UNIT 2188	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	
3 MONTHS			12/20/2006	
			DELIVERY MODE PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/690,218	BRETLE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Anton Rabovianski	2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/21/2003</u> .  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This Office Action is responsive to the Application filed on 10/21/2003.

Claims 1-23 are presented for examination. Claims 1-23 are pending.

### ***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: e.g. "virtual machine architecture 20" in page 4, [0014] and "clients 12" in page 4, [0015]. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7, 8, 18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The limitations "when the remaining free space becomes low" in claims 7 and 18, lines 2-3 and "when the amount of space reclaimed from objects that were garbage collected becomes high" in claims 8 and 19, lines 2-3 are vague and indefinite. More specifically, it is not clear how low is "low" and how high is "high". For the purpose of applying prior art the conditions above are always considered to be correct.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 6-15 and 17-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Gemfire: Operating at the Speed of Memory, Technical White Paper, Gemstone Systems Inc., March 2002. The reference is referred hereafter as Gemfire.

With respect to claim 1, the Gemfire reference teaches an a computer readable medium having plural object application processes that each include a separate execution model and a process memory for running programs with regard to encapsulated software objects, an improvement comprising: a shared object memory in the computer readable medium storing encapsulated software objects that are directly

accessible by the plural object application processes, the shared object memory not including an execution model and being distinct from the process memories of the object application processes; and a shared object memory manager that provides management of objects within the shared object memory (fig. 2 and fig. 4, page 2, col. 1 and page 4, 5.1).

Regarding claim 2, Gemfire further teaches that the shared object memory manager provides garbage collection to remove unused objects in the shared object memory (page 6, 5.6).

With respect to claim 3, Gemfire further disclose an object namespace in the shared object memory listing software objects stored in the shared object memory (page 4, 5.2).

With respect to claim 4, the Gemfire reference further teaches that the shared object memory manager provides garbage collection to remove unused objects in the shared object memory according to whether the objects are referenced in the object namespace (page 6, 5.6).

Regarding claim 6, Gemfire further teach that the shared object memory manager provides automatic creation in the shared object memory of each object that is referenced by a stored object (page 5, col. 1).

With respect to claim 7, the Gemfire reference further teaches that the shared object memory manager compacts the shared object memory when remaining free space becomes low (page 6, 5.6).

Regarding claim 8, Gemfire further discloses that the shared object memory manager compacts the shared object memory when the amount of space reclaimed from objects that were garbage collected becomes high (page 6, 5.6).

With respect to claim 9, Gemfire further discloses that each object in the shared object memory is of a class and the shared object memory manager provides registration of each class prior to an object of the class being stored in the shared object memory (page 5, col. 1).

Regarding claim 10, Gemfire further teaches that the shared object memory manager provides for creation of objects in the shared object memory and initialization

of object states with at least one of primitive data or reference to another object in the shared object memory (page 5, col. 1).

With respect to claim 11, the Gemfire reference further discloses that the object application processes include at least one Java virtual machine (fig. 2 and page 2, col. 2).

Regarding claim 12, Gemfire further discloses that the object application processes include at least one program in one of a family of C programming languages (fig. 2 and page 2, col. 2).

With respect to claim 13, Gemfire teaches in a computer readable medium, shared object memory software for operating a shared object memory that is accessible by plural object application processes of a host computer that each include a separate execution model and a process memory for running programs with regard to encapsulated software objects (page 2), comprising: software for allocating in the host computer a shared object memory that is distinct from the process memories of the object application processes (page 4, 5.1); software for creating software objects in the shared object memory (page 5, col. 1); software for providing the object application processes with direct access to the objects stored in the shared object memory (page 4, 5.2); and software for garbage collecting to remove unused objects in the shared object memory (page 6, 5.6).

Regarding claim 14, Gemfire further discloses that the software for creating software objects in the shared object memory lists objects in an object namespace included in the shared object memory (page 4, 5.2).

With respect to claim 15, Gemfire further teaches that the software for garbage collecting to remove unused objects in the shared object memory according to whether the objects are referenced in the object namespace (page 6, 5.6).

With respect to claim 17, Gemfire further discloses that the software for storing software objects in the shared object memory provides automatic storing in the shared object memory of each object that is referenced by a stored object (page 5, col. 1).

Regarding claim 18, Gemfire further teaches software for compacting the shared object memory when remaining free space becomes low (page 6, 5.6).

With respect to claim 19, Gemfire further disclose software for compacting the shared object memory when the amount of space reclaimed from objects that were garbage collected becomes high (page 6, 5.6).

Regarding claim 20, Gemfire further discloses that each object in the shared object memory is of a class and the software for creating software objects in the shared object memory provides registration of each class prior to an object of the class being stored in the shared object memory (page 5, col. 1).

With respect to claim 21, Gemfire further teaches that the software for creating software objects in the shared object memory provides for creation of objects in the shared object memory and initialization of object states with at least one of primitive data or reference to another object in the shared object memory (page 5, col. 1).

Regarding claim 22, Gemfire further teaches that the object application processes include at least one Java virtual machine (fig. 2 and page 2, col. 2).



With respect to claim 23, Gemfire further teaches that the object application processes include at least one program in one of a family of C programming languages (fig. 2 and page 2, col. 2).

### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gemfire in view of Official notice.

Regarding claim 5, the Gemfire reference further inherently discloses that the object namespace includes a data structure with a field `ObjectName` and a field `ObjectID`, in which the `ObjectName` field lists a name by which each object is accessed by an application process and the `ObjectID` field provides a reference for each object (page 5, col. 1 and page 6, 5.6). Gemfire does not teach that the `ObjectID` field provides a reference for each object in an object table that includes a memory location pointer indicating a location where the object is located in the shared object memory. However, reference to a table containing a memory location pointer is well known in the art, and Official notice of this is hereby taken. It would have been obvious at the time of the invention to a person having ordinary skill in the art to have modified the system taught by Gemfire so that the `ObjectID` field provides a reference for each object in an object

table that includes a memory location pointer indicating a location where the object is located in the shared object memory. In doing so, a faster update to the memory location pointer in the object table referred to by multiple shared objects is performed.

Regarding claim 16, Gemfire further inherently discloses that the object namespace includes a data structure with a field ObjectName and a field ObjectID, in which the ObjectName field lists a name by which each object is accessed by an application process and the ObjectID field provides a reference for each object (page 5, col. 1 and page 6, 5.6). Gemfire does not teach that the ObjectID field provides a reference for each object in an object table that includes a memory location pointer indicating a location where the object is located in the shared object memory. However, reference to a table containing a memory location pointer is well known in the art, and Official notice of this is hereby taken. It would have been obvious at the time of the invention to a person having ordinary skill in the art to have modified the system taught by Gemfire so that the ObjectID field provides a reference for each object in an object table that includes a memory location pointer indicating a location where the object is located in the shared object memory. In doing so, a faster update to the memory location pointer in the object table referred to by multiple shared objects is performed.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anton Rabovianski whose telephone number is 571-270-1026. The examiner can normally be reached on M-Th 9:00am-7:30pm EST.

Art Unit: 2188

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung S. Sough can be reached on 571-272-6799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AR

Anton Rabovianski

December 13, 2006

  
HYUNG SOUGH  
SUPERVISORY PATENT EXAMINER